

Questions for Pleasant Prairie

The following questions relate to EPA's review of the analytical data We Energies provided with comments on the proposed effluent guidelines and in response to EPA's request for additional data.

1. Using the process flow diagram included in We Energies' 2/10/2014 letter, please identify the location for each sample point associated with data submitted with comments or in response to EPA's data request:
 - a. Data submitted with comments
 - i. Effluent from FGD Chemical Precipitation Wastewater Treatment System
 - ii. Effluent from FGD Wastewater Treatment System (SP 102)
 - iii. Effluent from the FGD Chemical Precipitation Wastewater Treatment System
 - iv. Influent to FGD Chemical Precipitation Wastewater Treatment System
 - v. Influent to FGD Wastewater Treatment System (Reaction Tank #1 Influent)
 - vi. Influent to FGD Wastewater Treatment System (for Reaction Tank #1 Influent)
 - vii. Internal Point within the FGD Wastewater Treatment System (Primary Clarifier Effluent)
 - viii. Internal point within the FGD Wastewater Treatment System (Primary Clarifier Effluent)
 - ix. Internal Point within the FGD Wastewater Treatment System (Secondary Clarifier Effluent)
 - x. Internal point within the FGD Wastewater Treatment System (Secondary Clarifier Effluent)
 - b. Response to EPA's data request
 - i. FGD Purge
 - ii. Secondary Clarifier
 - iii. Chem Prep. Effluent
2. How were samples collected for the secondary clarifier?
3. Are all grab samples single grabs or are there composites of multiple grabs?
4. EPA was not able to verify the RL or dilution factor in the lab reports. How did Pleasant Prairie obtain these values?

Analytical Data Provided in Comments

5. Why was arsenic measured using Method 6020A, since it is not included in 40 CFR Part 136 as a CWA-approved method? (note that 6020A was also used to analyze samples of secondary clarifier effluent, provided in response to EPA's data request)
6. As noted in the analytical spreadsheet, We Energies provided the average result when multiples samples were collected from the same sampling location on the same day.
 - a. There are several instances where the calculated average mercury value should end in a decimal (i.e., XX.5), which differs from the spreadsheet entry. Do you agree the discrepancy is due to We Energies rounding the value down to the nearest integer (see Table 1)?

- b. On a few days, where multiple samples from the same sampling location were collected for an analyte, the two samples were averaged together but the MDL for only one of the individual samples was included in the analytical spreadsheet (see Table 2). Please explain the reasoning for which MDL was provided in the analytical spreadsheet.

Table 1. Pleasant Prairie Averaged Values and EPA Calculated Average Values

Type of Wastewater	Date	Analyte	Procedure	Units	Non-Detect Indicator	Amount	EPA Calculated Average
FGD WWTS Effluent - SP 102	5/25/2010	Mercury	Total	ng/L	D	374	374.5
FGD WWTS Effluent - SP 102	6/9/2010	Mercury	Total	ng/L	D	92	92.5
FGD WWTS Effluent - SP 102	7/7/2010	Mercury	Total	ng/L	D	94	94.5
FGD WWTS Effluent - SP 102	11/23/2010	Mercury	Total	ng/L	D	56	56.5
FGD WWTS Effluent - SP 102	12/15/2010	Mercury	Total	ng/L	D	64	64.5
FGD WWTS Effluent - SP 102	6/21/2011	Mercury	Total	ng/L	D	92	92.5
FGD WWTS Effluent - SP 102	6/28/2011	Mercury	Total	ng/L	D	68	68.5
FGD WWTS Effluent - SP 102	7/13/2011	Mercury	Total	ng/L	D	58	58.5
FGD WWTS Effluent - SP 102	7/26/2011	Mercury	Total	ng/L	D	92	92.5
FGD WWTS Effluent - SP 102	12/28/2011	Mercury	Total	ng/L	D	88	88.5
FGD WWTS Effluent - SP 102	12/30/2011	Mercury	Total	ng/L	D	100	100.5
FGD WWTS Effluent - SP 102	11/13/2012	Mercury	Total	ng/L	D	94	94.5
FGD WWTS Effluent - SP 102	11/14/2012	Mercury	Total	ng/L	D	88	88.5
FGD WWTS Effluent - SP 102	4/10/2013	Mercury	Total	ng/L	D	78	78.5
FGD WWTS Effluent - SP 102	4/24/2013	Mercury	Total	ng/L	D	80	80.5

Table 2. Pleasant Prairie Averaged Values with Different MDLs for the Averaged Samples

Type of Wastewater	Date	Analyte	Procedure	Units	Non-Detect Indicator	Amount	MDL in Data Table	MDL in Lab Report
FGD WWTS Effluent - SP 102	8/5/2008	Mercury	Total	ng/L	D	335	60	1.2, 60
FGD WWTS Effluent - SP 102	5/24/2010	Mercury	Total	ng/L	D	340	14	14, 15
Primary Clarifier Effluent	6/17/2008	Arsenic	Total	ug/L	<	[blank]	4.7	4.7, 2.4, 2.4
Primary Clarifier Effluent	3/30/2009	Mercury	Dissolved	ng/L	D	3,500	25	12, 25

7. There are several discrepancies between the MDL values reported in the analytical spreadsheet compared to the MDL cited in the lab report (see Table 3). Please confirm which MDL value is correct for these data samples.

Table 3. Pleasant Prairie MDL Value Discrepancies between Analytical Spreadsheet and Lab Reports

Type of Wastewater	Date	Analyte	Procedure	Units	Non-Detect Indicator	Amount	MDL in Data Table	MDL in Lab Report
Reaction Tank #1 Influent	12/18/2007	Mercury	Dissolved	ng/L	D	2,400	50	1
Reaction Tank #1 Influent	8/4/2008	Mercury	Dissolved	ng/L	D	2,300	60	1.2
Secondary Clarifier Effluent*	10/28/2008	Mercury	Total	ng/L	D	530	16	0.63
Secondary Clarifier Effluent	7/10/2009	Mercury	Total	ng/L	D	340	12	0.5
Secondary Clarifier Effluent	8/7/2009	Mercury	Total	ng/L	D	410	14	0.57
Secondary Clarifier Effluent	8/10/2009	Mercury	Total	ng/L	D	470	14	0.57
Secondary Clarifier Effluent	8/10/2009	Mercury	Dissolved	ng/L	D	47	14	0.57
Primary Clarifier Effluent	11/19/2009	Mercury	Dissolved	ng/L	D	220	25	28
Primary Clarifier Effluent	11/24/2009	Mercury	Dissolved	ng/L	D	260	25	28
Primary Clarifier Effluent	12/21/2009	Mercury	Dissolved	ng/L	D	730	25	28
Primary Clarifier Effluent	4/16/2010	Mercury	Dissolved	ng/L	D	390	25	28
Primary Clarifier Effluent	5/5/2010	Mercury	Dissolved	ng/L	D	440	25	28

*Dump valve

8. The primary clarifier effluent and secondary clarifier effluent results for mercury from 11/6/2007 through 11/15/2007 and 3/30/2009 through 3/31/2009 note that "Jar testing may have been conducted on this date." Do these sample results represent the primary clarifier effluent or the primary clarifier effluent after additional jar testing?
9. The secondary clarifier effluent results for mercury on 10/28/2008, 10/29/2008, and 3/16/2009 notes that the sample is "Dump Valve." What does this sample represent?
10. The secondary clarifier effluent result for mercury on 10/29/2008 notes that the sample is "Sample Tap." What does this sample represent?

Analytical Data Provided in Data Request

11. The total mercury and total mercury field duplicate for the FGD WWTS Effluent – SP 102 on 8/6/2013 both have a reported MDL of 0.45 ng/L in the lab report. However, according to the analytical spreadsheet, the MDL is reported as 11 ng/L. Because of the elevated MDL, the duplicate sample was treated as a J-value in the calculation of the average. Which MDL values are correct? Should the duplicate sample be considered a J-value?
12. For the total mercury result from the FGD WWTS Effluent – SP 102 on 10/29/2013, the native and duplicate sample were averaged together. However, only the native sample MDL (18 ng/L) was reported in the spreadsheet. The duplicate sample MDL was 0.72 ng/L. Please explain the reasoning for why the native sample MDL was provided in the analytical spreadsheet.

Additional Questions

13. Pleasant Prairie stated that hydrochloric acid is added to Reaction Tank #2 at a dose concentration of 0.012 g/L and dosage rate of 1.9 gpd. When did Pleasant Prairie begin adding hydrochloric acid to Reaction Tank #2? (EPA's understanding is that during the initial operation of the system, the plant was only adding hydrochloric acid downstream of the secondary clarifier.)
14. Please provide a general timeline for the collection and analysis of the mercury samples that are analyzed using the in-plant analyzer (i.e., the DMA 80 Hg Analyzer). Please include enough detail to answer the following questions:
 - a. Who collects the mercury samples (e.g., position title)?
 - b. What type of handling procedures are used (i.e., are clean hands/dirty hands protocols used)?
 - c. Where are the samples taken for analysis?
 - d. Who performs the analysis (e.g., position title)?
 - e. What type of experience is required to perform the analysis?
 - f. How long after the analysis is started are the results available?
 - g. How long after the sample is collected are the results available?
15. Would pollutant characteristics of the secondary clarifier effluent differ from phys-chem effluent (SP-102)?
16. We observed several results at substantially higher concentrations relative to the other effluent values. What was happening with plant processes, coal sources, treatment system operation? What actions were taken in response to these observed concentrations?
 - a. Mercury data for 2007 at highly elevated concentrations
 - b. 1/31/11 (1440 ng/L) and 2/1/11 (970 ng/L) – secondary clarifier (compare to data for 2/3 and 2/4)
 - c. 2/15/11 (780 ng/L) and 2/16/11 (615 ng/L) – CP effluent
 - d. 3/18/11 (665 ng/L) – CP effluent
 - e. 2/3/12 (815 ng/L) and 2/4/12 (705 ng/L) – CP effluent
 - f. 6/13/12 (2900 ng/L) – CP effluent
 - g. 6/18/12 (8300 ng/L) – secondary clarifier

- h. 6/28/12 (640 ng/L) – CP effluent
- i. 1/3/13 (360 ng/L clarifier effluent; 855 ng/L CP effluent)

17. What day did the plant switch from TMT-15 to Nalmet?